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Broadcast
Source — 14

Internet — 24

Server — 22

Portal — 23

Gateway — 26

12

10

EPG
Local Data
Store — 30

20

18

Fig-1

Client — 32

Request 001
- Vote

Request 002
- MP3

Request 003
e-commerce

① 32

Client
(PDA)

30

EPG

② 22

Server

③

TCP/IP

④

IP	ID	Request
192.168.1.123	001	Vote
192.168.1.128	002	MP3
192.168.1.125	003	Order

50

Request 001
- Vote -
Result

Request 002
- MP3 -
Sample MP3 Clip

Request 003
e-commerce
Order Confirmation

Fig-2

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72 — Handheld Application

74 — Generate Internet Portal Requests

76 — Store Requests Locally

54 — Daemon on handheld

Check Internet Connection

Connected? **56**

N

Y

70 — Send Requests

78 — Receive Acknowledgement

80 — Update Status of Request

82 — Notify User

58 — Check Incoming Return Message

60 — Receive Returned Contents Package

62 — Unpack Return Package

64 — Parse Request ID

66 — Update Request Status

68 — Notify User

Fig-3A

84 — Check Incoming Requests

86 — Parse Request

88 — Send Acknowledgement

90 — Fulfill Requests with Contents

92 — 3rd Party Content Provider

94 — Pack Requested Contents

96 — Send to Client

Fig-3B

```
- <request id="D4867" type="download" subtype="cd" date="2002-02-22"
        time="14:30:58">
        <uri value="7684D.jar" />
  - <customer>
          <id>HH-0231-03</id>
          <name>John Smith</name>
          <email>jsmith@bol.com</email>
    </customer>
  </request>
```
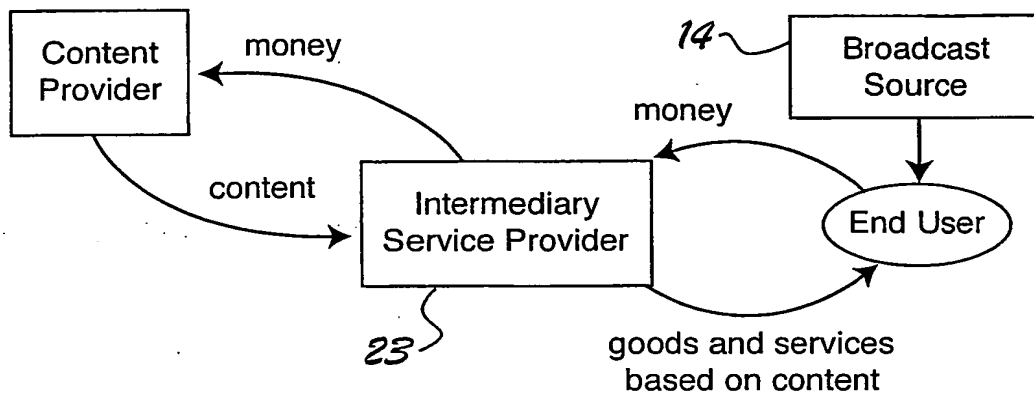
Fig-4A

```
- <request id="M18653" type="download" subtype="movie" date="2002-02-29"
        time="16:05:08">
        <uri value="35681M.jar" />
  - <customer>
          <id>HH-0237-03</id>
          <name>John Danies</name>
          <email>danies@bol.com</email>
    </customer>
  </request>
```

Fig-4B

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```
- <request id="E632833" type="epg" date="2002-09-27" time="16:33:32">
      <uri value="epg.jar" />
- <epg>
      <channel>sports, music, 17, 32</channel>
  </epg>
- <customer>
      <id>HH-0231-03</id>
      <name>John Larry</name>
      <email>Larry@bol.com</email>
  </customer>
</request>
```
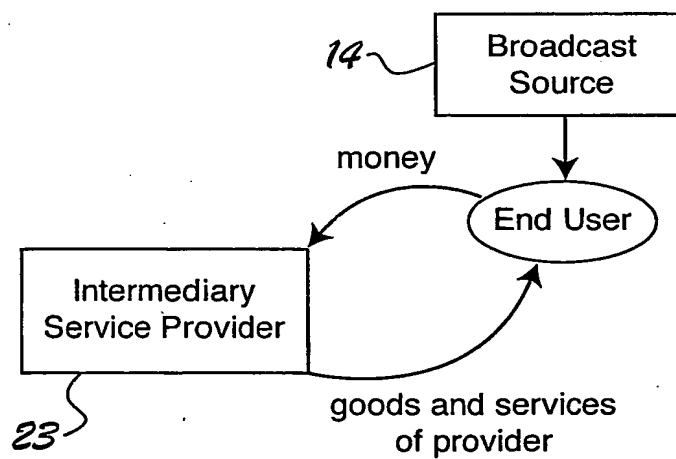
Fig-4C

```
- <request id="C04562" type="order" date="2002-02-22" time="14:45:08">
      <uri value="order.jar" />
   - <bill type="credit card">
     - <card>
          <number>524276870909</number>
          <expire>2003-10</expire>
          <name>John Smith</name>
          <address>2 Research Way, 3rd Floor Princeton, NJ 08540</address>
          <telephone>(609)734-7340</telephone>
       </card>
     - <shipping>
          <name>Tim Smith</name>
          <address>1011 Palm Square Princeton, NJ 08544</address>
          <telephone>(609)347-3470</telephone>
       </shipping>
       </bill>
     - <customer>
          <id>HH-0231-03</id>
          <name>John Smith</name>
          <email>jsmith@bol.com</email>
       </customer>
  </request>
```
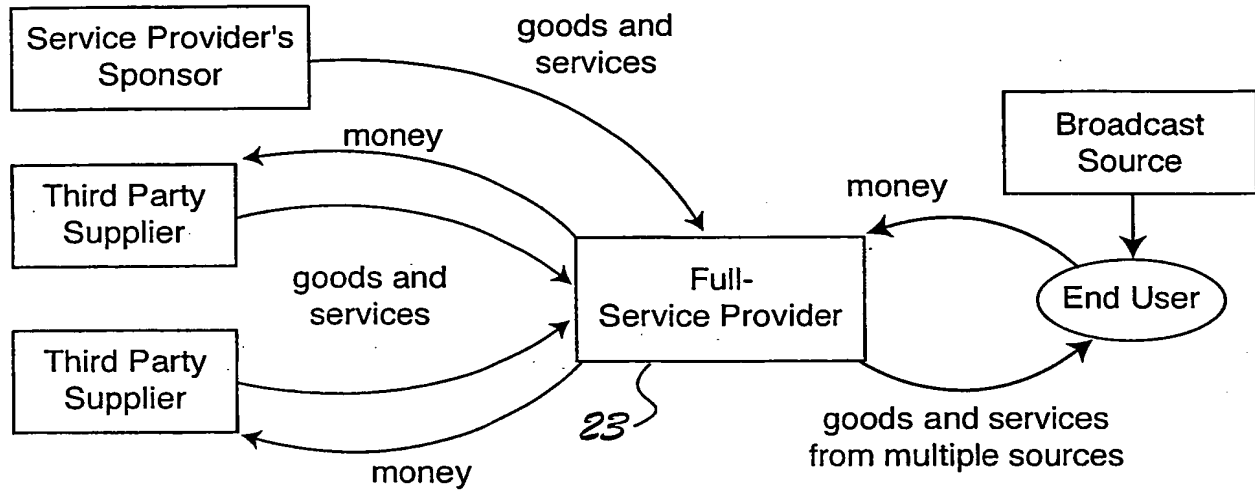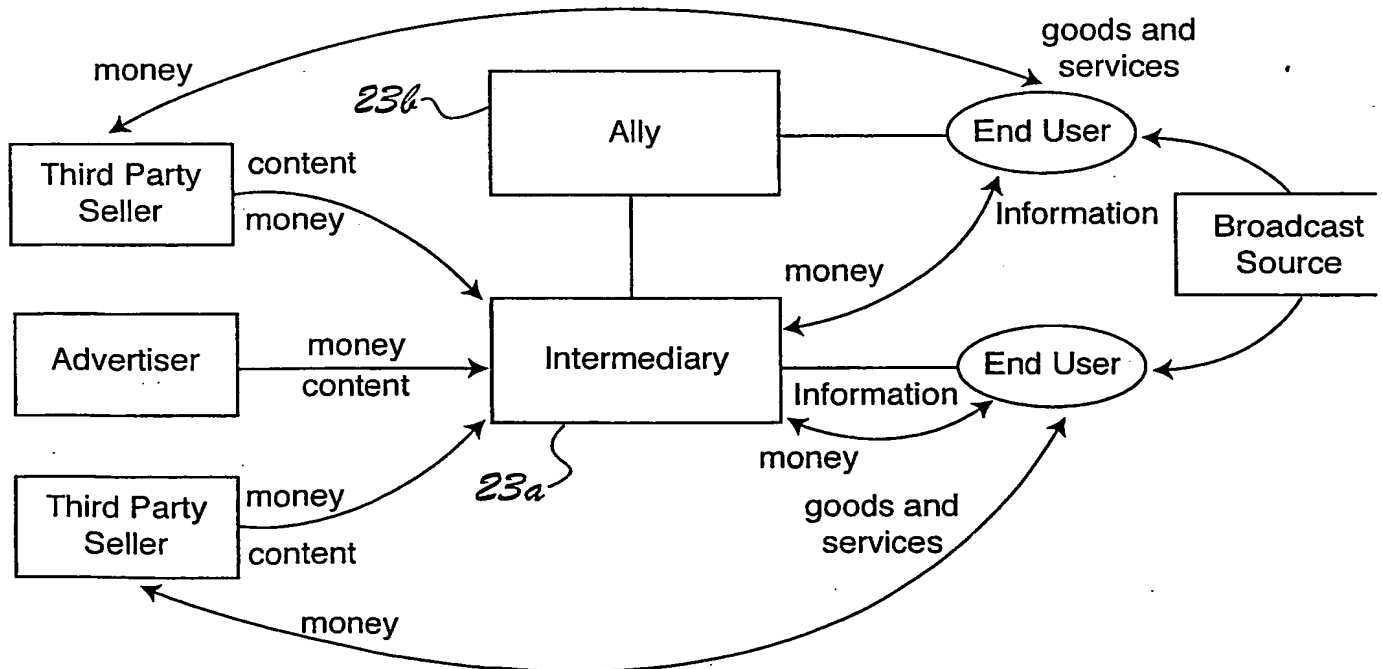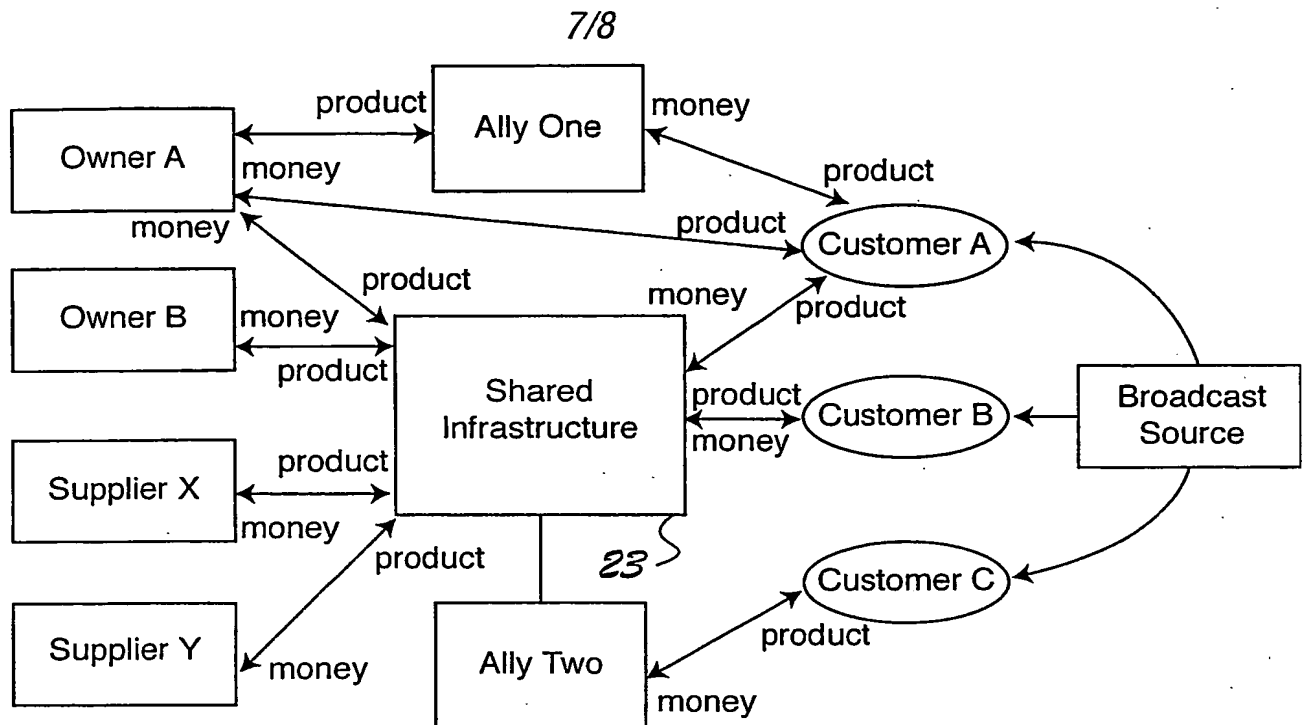
Fig-4D

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Content Provider Model

IFig-5

Direct-To-Customer Model

IFig-6

goods and services

| Service Provider's Sponsor |

money

| Third Party Supplier |

goods and services

| Third Party Supplier |

money

| Broadcast Source |

money

| Full-Service Provider |
23

(End User)

goods and services from multiple sources

Full-Service Provider Model

Fig-7

money

| Third Party Seller |

content
money

| Advertiser |

money
content

| Third Party Seller |

money
content

23b

| Ally |

| Intermediary |
23a

money

goods and services

(End User)

Information

| Broadcast Source |

money

(End User)

Information

money

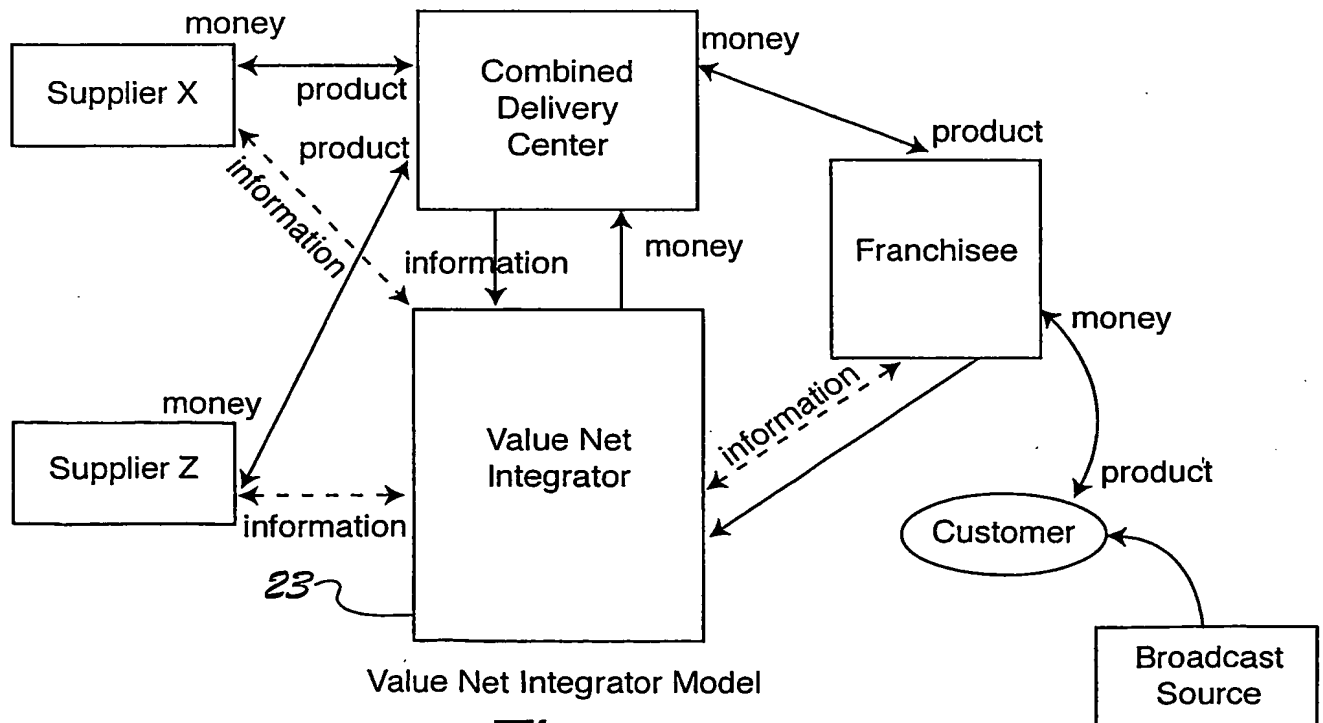goods and services

money

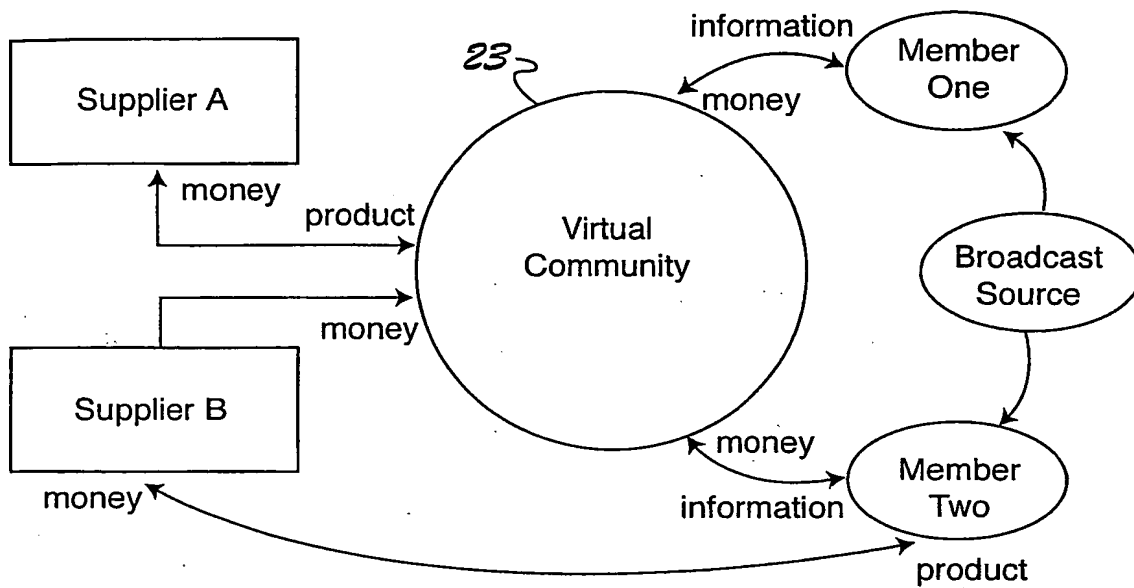Intermediary Model

Fig-8

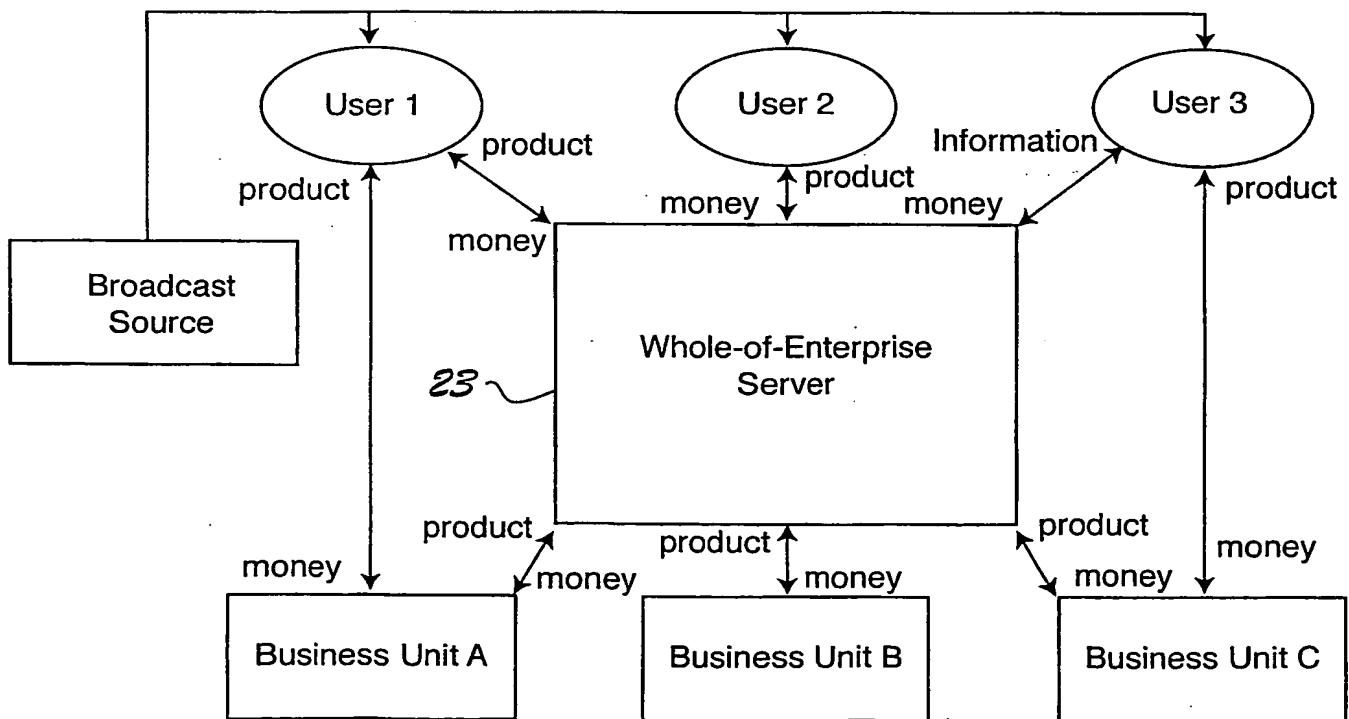Shared Infrastructure Model

IFig- 9

Value Net Integrator Model

IFig-10

Virtual Community Model

IFig-11

Whole-of-Enterprise Model

IFig-12